

## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference W9643-02		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US04/21998	International filing date (day/month/year) 09 July 2004 (09.07.2004)	Priority date (day/month/year) 11 July 2003 (11.07.2003)	
International Patent Classification (IPC) or national classification and IPC IPC(7): C09K 3/14; C09G 1/02; H01L 21/321 and US Cl.: 51/307-309; 106/3; 438/692-693; 451/28, 36, 41			
Applicant W.R. GRACE & CO.-CONN			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of ___ sheets.</p> <p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input checked="" type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 11 February 2005 (11.02.2005)		Date of completion of this report 05 January 2006 (05.01.2006)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/ US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer Michael A. Marcheschi Telephone No. (571) 272-1700	

Form PCT/IPEA/409 (cover sheet)(July 1998)

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US04/21998

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed.
- ☒ the description:  
 pages 1-24 as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_.
- ☒ the claims:  
 pages 25-28 as originally filed  
 pages NONE, as amended (together with any statement) under Article 19  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_.
- ☒ the drawings:  
 pages 1-2 as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_.
- ☐ the sequence listing part of the description:  
 pages NONE as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_.

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages none
- ☒ the claims, Nos. none
- ☒ the drawings, sheets/fig none

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/US04/21998**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-22</u>	NO
Industrial Applicability (IA)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO

**2. CITATIONS AND EXPLANATIONS**

Claims 1-22 lack an inventive step under PCT Article 33(3) as being obvious over either (1) WO 01/85868, (2) Hagihara et al. (007), (3) Fang et al. (817) or (4) WO 01/98201.

WO 01/85868 teaches in the abstract and the claims, a polishing composition and polishing method, wherein the polishing composition comprises an abrasive having a poly dispersed particle sizes distribution (colloidal silica).

Hagihara et al. (007) teach in the abstract and the claims, a polishing composition and polishing method, wherein the polishing composition comprises an abrasive having a poly dispersed particle sizes distribution (colloidal silica).

Fang et al. (817) teach in column 3, line 10-column 4, line 68 and the claims, a polishing composition and polishing method, wherein the polishing composition comprises an abrasive having a poly dispersed particle sizes distribution (colloidal silica).

WO 01/98201 teach on page 3, line 4-page 4, line 9 and the claims, a polishing composition and polishing method, wherein the polishing composition comprises an abrasive having a poly dispersed particle sizes distribution (colloidal silica).

All of the references teach polishing compositions and polishing method, wherein the polishing composition comprises an abrasive (colloidal silica) having a poly dispersed particle sizes distribution (size less than 100 nm). The reference sizes encompass the claimed sizes of 20-100 nanometers, thus an inventive step is not met because overlapping ranges are obvious. With respect to the claimed span value, although a span value is not literally defined, the broad disclosure of the size encompasses and therefore makes this obvious. With respect to the fraction of particles having the claimed maximum size (100 nm), all of the reference teach abrasives which can have a size less than 100 nm, thus the reference do not have to have sizes over 100 nm and therefore the fraction of particles can be zero (within the claimed range of "less than").

Claims 1-22 meet the criteria set out in PCT Article 33(4), and thus meet the industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----  
NONE

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.

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**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 2-7, 10, 12-14, 16, 18-20 and 22 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claims are indefinite for the following reason(s):

Claims 2-5, 7, 12-14 and 18-20 are indefinite because the span value is outside the scope of claims 1, 11 and 17.

Claim 4 is also indefinite because it appears to be a duplicate of claim 2.

Claim 6 is indefinite because the claim 1 already defines this.

Claim 10, 16 and 22 are indefinite because the examiner is unclear as to what the cations are bonded to. Can they be bonded to (1) both the alumina and the aluminum or (2) only the aluminum or only the alumina.